

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

LeRoy Koppendraye
Marshall Johnson
Ken Nickolai
Thomas Pugh
Phyllis A. Reha

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of the Application of Mankato
Energy Center, LLC, a Wholly-Owned
Subsidiary of Calpine Corporation, for a
Certificate of Need for a Large Electric
Generating Facility

ISSUE DATE: September 22, 2004

DOCKET NO. IP-6345/CN-03-1884

ORDER GRANTING CERTIFICATE OF
NEED

PROCEDURAL HISTORY

I. Initial Proceedings

On November 14, 2003, Calpine Corporation (Calpine) filed a petition stating that it intended to submit an application for a certificate of need to construct a natural-gas-fired combined cycle electric-generating facility at a site near Mankato. The petition also requested exemption from certain data requirements and determination of scope.

On February 6, 2004, the Commission issued its ORDER GRANTING EXEMPTIONS FROM FILING REQUIREMENTS AND LIMITING SCOPE. The Order granted Calpine's request for exemptions from specific data requirements and also granted Calpine's request to limit the scope of its certificate of need application with certain qualifications.

On March 2, 2004, Mankato Energy Center, LLC (Mankato Energy or the Company), a wholly owned subsidiary of Calpine, filed its certificate of need application for the portion of the plant that is not included in a then-pending contract with Northern States Power Company d/b/a Xcel Energy (Xcel), pursuant to a Commission-approved bidding process.¹

¹ The contract has since been approved. See *In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy for Approval of a Power Purchase Agreement with Mankato Energy Center, LLC*, Docket No. E-002/M-04-451, ORDER APPROVING POWER PURCHASE AGREEMENT (August 17, 2004).

On April 6, 2004, the Commission issued its ORDER FINDING APPLICATION SUBSTANTIALLY COMPLETE CONTINGENT UPON ADDITIONAL FILING AND REFERRING MATTER TO THE OFFICE OF ADMINISTRATIVE HEARINGS, requiring Mankato Energy to supplement its application. In this Order the Commission also authorized joint hearings on the issues raised in the certificate of need petition and the Company's siting petition to the Environmental Quality Board (EQB). On April 6, 2004, the Commission also issued its NOTICE AND ORDER FOR HEARING.

On August 20, 2004, the Administrative Law Judge, Allan W. Klein, submitted his Findings of Fact, Conclusions and Recommendation.

On September 1, 2004, the Department of Commerce (DOC) submitted its exceptions to the ALJ's Findings of Fact, Conclusions of Law and Recommendation.

On September 2, 2004, Mankato Energy submitted its exceptions.

II. The Parties and Their Representatives

Mankato Energy was represented by B. Andrew Brown, Dorsey and Whitney LLP, 50 S. Sixth Street, Minneapolis, Minnesota 55402.

Northern States Power Company d/b/a Xcel Energy (Xcel) was represented by Thomas Erik Bailey, Briggs and Morgan, 80 South Eighth Street, Suite 2200, Minneapolis, Minnesota 55155.

The DOC was represented by Karen Finstad Hammel, Assistant Attorney General, 445 Minnesota Street, Suite 1400, St. Paul, Minnesota 55101-2131.

The EQB was represented by Dwight Wagenius, Assistant Attorney General, Environmental Protection Division, NCL Tower Suite 900, 445 Minnesota Street, St. Paul, Minnesota 55101.

III. Non-Parties that Filed Comments with the ALJ

The Minnesota Project, Minnesota Soybean Growers Association, and Communities United for Responsible Energy (CURE) filed comments with the ALJ.

IV. Public and Evidentiary Hearings

Public hearings were held on three occasions on July 12-13, 2004 at the Intergovernmental Center in Mankato, Minnesota.

No member of the public commented on the proposed certificate of need or site permit. Blue Earth County Commissioner Katy Wortel asked questions concerning the differences between 100% biodiesel and various blends of fuels with smaller amounts of biodiesel. Mark Lindquist of the Minnesota Project asked questions concerning various aspects of biodiesel.

V. Environmental Filings

On May 20, 2004, the EQB issued its Environmental Assessment Scoping Decision. No other sites were included for analysis in the Environmental Assessment besides the site proposed by Mankato Energy.

On July 2, 2004, the EQB issued the Mankato Energy Environmental Assessment.

VI. Proceedings Before the Commission

On September 9, 2004, this matter came before the Commission. The record closed on September 9, 2004, when the Commission heard oral argument from the affected parties under Minn. Stat. § 14.61.

FINDINGS AND CONCLUSIONS

I. Factual Background

Mankato Energy is a wholly owned subsidiary of Calpine Corporation, a large independent power company. Mankato Energy was formed by Calpine to develop, construct and operate the power plant that is the subject of this proceeding.

Mankato Energy proposed building a power plant using natural gas-fired combustion turbines in a combined cycle configuration, which will be capable of generating approximately 655 megawatts (MW) of electric power at summer ambient conditions and 730 MW at winter ambient conditions. This generating capacity includes both baseload capacity (approximately 505 MW) and peaking capacity (approximately 150 MW) to be obtained from power augmentation equipment.

The facility, to be named the Mankato Energy Center, will use natural gas with low-sulfur distillate oil as a back-up fuel. The facility as a whole will include two combined cycle combustion turbine generators, two heat recovery steam generators equipped with duct burners, one steam turbine generator/condenser, one multi-cell mechanical draft-cooling tower, and various other machinery and equipment.

Mankato Energy has committed to supply approximately 375 megawatts of power to Xcel after being selected in a bidding process approved by the Commission. Mankato Energy will offer the power not committed to Xcel through the Purchased Power Agreement (PPA) to wholesale customers, including Minnesota utilities and cooperatives.

In the application herein, Mankato Energy seeks a certificate of need for the wholesale power production of the facility. This portion of the facility could produce 355 MW at ambient winter conditions and 325 MW at ambient summer conditions.

The portion of the facility that will generate the wholesale power includes one combustion turbine, one heat recovery steam generator and four or five additional cells on the cooling tower. In addition, both the lateral natural gas pipeline connection and the water supply and discharge pipelines will be slightly larger than they would be if the facility was built only to satisfy the requirements of the PPA.

The facility site is approximately 25 acres in size and is located north of the Mankato city limits within Lime Township. It will connect to the Northern Natural Gas (NNG) pipeline approximately four miles east of the site. The primary fuel, natural gas, will be delivered from the NNG mainline. Mankato Energy intends to construct a 20-inch diameter pipeline to transport gas from the NNG pipeline to the facility. The pipeline route permit decision will take place under a separate proceeding. Low sulfur distillate fuel oil will be used as a back-up fuel if natural gas suppliers are unable to provide natural gas.

The facility will have direct access to the transmission grid at the Wilmarth Substation approximately 1,500 feet west of the site and will not require construction of a lengthy off-site high voltage transmission line. The part of the facility that is the subject of the certificate of need application would require only one new 115 kV transmission line to interconnect at the Wilmarth Substation. However, a 345kV transmission line and an additional 115 kV line would be constructed as part of the facility to deliver power provided pursuant to the power purchase agreement with Xcel.

Mankato Energy is planning to have the facility in-service by mid-2006.

II. ALJ's Findings on the Certificate of Need Criteria

The criteria for granting a certificate of need are set forth in Minn. Stat. § 216B.243 and Minn. Rules, parts 7849.0010 through 7849.0400.

Minn. Rule 7849.0120 sets forth four criteria which must be met in order to establish need for a large electric power generating facility and transmission lines directly associated with the plant that are necessary to interconnect the plant to the transmission system. Each of these criteria and some of the ALJ's findings concerning them will be discussed below.

A. The probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota

Mankato Energy's application for a certificate of need included five separate analyses of demand and energy forecasts for the Mid-Continent Area Power Pool (MAPP) region. The ALJ found that each of these reports supports the conclusion that additional generation is needed in the MAPP region to maintain adequate capacity reserve margins.

The ALJ found that, based on the record as a whole, a need for both additional capacity and energy exists in the MAPP-US region. The MAPP-US reserve capacity is predicted to fall below the MAPP-required 15 percent reserve capacity in 2006. The proposed facility would help reduce the reserve capacity deficit and maintain adequate capacity reserve margins.

B. A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record

The ALJ found that the Company examined non-renewable alternatives, including coal, an oil-fired combustion turbine and a simple-cycle combustion turbine. The ALJ found that a coal-fired facility provides baseload power and would be unable to quickly change generation output to meet fluctuating customer load levels. An oil-fired combined cycle alternative would be able to produce longer-term and peaking capacity and could do so with relatively reasonable costs. However, neither a coal-fired facility nor a combined cycle oil-fired alternative would be available by June 2006, Mankato Energy's intended operational date. A simple cycle combustion turbine would not be appropriate for supplying longer-term power due to high operational costs.

Further, the ALJ found that the combined capacity and energy costs of the proposed natural gas-fired combined cycle facility are lower than any of the other fossil fuel alternatives. The facility is not expected to significantly affect the cost or availability of natural gas to other natural gas customers.

The planned back-up fuel for the facility is low sulfur distillate oil. An analysis of biodiesel, biomass and ethanol compared to low sulfur distillate oil indicated that the low sulfur distillate oil is appropriate for the facility. The ALJ found that it is possible, but not practical at this time, that other fuels such as hydrogen, methanol, propane and blended gases could be used as fuel for the facility with proper modifications or equipment enhancements.

Regarding biodiesel and biodiesel blends, the ALJ found that currently the major drawbacks to increased use of biodiesel are the higher cost and the availability of the fuel in sufficient quantities. Biodiesel has not been proven for use in combustion turbines of the kind proposed for this facility. The ALJ found that these concerns decrease as the percentage of biodiesel to regular fuel reduces in blend. The ALJ noted that the Company's response to a request to start with a low percentage blend was that until the uncertainties are resolved, it does not want to experiment.

The ALJ found that there was no reasonable and prudent alternative to the proposed facility, considering size, type, timing, cost, environmental and socioeconomic effects, and reliability of the project and the reasonable alternatives.

The Company explored renewable options such as hydropower, wind, solar, geothermal and biomass. The ALJ found that no renewable options could reasonably meet the project's objectives.

The ALJ found that resources like this one, which can operate as a complement to wind by ramping up when the wind does not blow and ramping down when the wind blows, can effectively incorporate an intermittent resource such as wind into the generation mix so that the electric system as a whole remains reliable and secure at a reasonable cost.

C. A preponderance of the evidence on the record demonstrates that the consequences of granting the certificate of need for the proposed facility are more favorable to society than the consequences of denying the certificate

The ALJ found that not constructing this facility is likely to reduce the reliability of the electric generation system in Minnesota because of the projected deficits in electric energy and generation capacity.

He found that the proposed combined-cycle technology, relying on natural gas and steam to generate electricity, will make the facility one of the most efficient fossil fuel power plants in the state, with less negative impact on the natural environment than less fuel-efficient facilities.

The ALJ found that the proposed facility was both economically and environmentally attractive. The proposed location would minimize the construction of natural gas pipeline and transmission lines. It would provide benefits to society in a manner compatible with protecting natural and socioeconomic environments, including human health.

D. It has not been demonstrated on the record that the design, construction, and operation of the proposed facility will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments

The ALJ found no evidence that Mankato Energy would fail to comply with applicable regulatory requirements in any jurisdiction.

The ALJ concluded that the requirements for a certificate of need as set forth in Minn. Stat. § 216B.243 and Minn. Rules part 7849 have been met.

III. Exceptions to the ALJ's Report

A. DOC

The DOC requested that the Commission modify three of the ALJ's Findings of Fact to more accurately reflect the record. Mankato Energy did not object to the clarifications.

1. The DOC recommended that the Commission not accept Finding of Fact 55 or modify the finding in paragraph 55 to state that MAPP predicts "reserve capacity deficits" rather than "energy supply shortfalls."

2. The DOC recommended that the first sentence of Finding of Fact 142 be modified as follows: In the sentence “[e]xisting resources in the MAPP-US region cannot meet the region’s projected demand,” replace “demand “ with “need for capacity reserves.”
3. The DOC recommended that Finding of Fact 143 be modified as follows: In the sentence “Not constructing this facility is likely to reduce the reliability of the electric generation system in Minnesota because of the projected deficits in electric energy and generation capacity,” replace the words “energy and generation capacity” with “capacity reserve margins that are forecasted to occur beginning in 2006.”

B. Mankato Energy

Mankato Energy objected to the last sentence in Finding of Fact 75 which states: “...However, to the extent that the Calpine facility “soaks up” need for capacity or energy so that alternative facilities are not built, then distribution utilities (and their rate payers) may be forced to purchase from Calpine regardless of the cost.” It argued that the sentence suggesting that utilities may be forced to purchase from Calpine regardless of cost is not supported in the record and requested that the Commission not adopt this sentence in Finding of Fact 75.

Mankato Energy also took exception to Findings of Fact 100 and 137 because the ALJ suggested that biodiesel blends may be a viable option for use as a backup fuel at the facility. The Company argued that the record contains uncertainties regarding the use of biodiesel and that the uncertainties with biodiesel must be resolved prior to its adoption as a backup fuel.

Finally, Mankato Energy took exception to Findings of Fact 106 and 164, which no longer reflect the current description of the planned wastewater treatment system. Mankato Energy requested that the third sentence of Finding 106 and the second sentence of Finding 164 each be replaced by the following: “The Mankato WWTP will pre-treat water to be delivered to the Facility for use as non-contact cooling water. Once used, Facility non-contact cooling water will be returned to the WWTP.”

IV. Other Corrections

Other corrections were set forth by Commission staff. There were no objections to the following corrections/clarifications:

- The statutory reference in Finding of Fact 46 should be Minn. Stat. § 216B.2421, subd. 2(1).
- For clarification purposes, the last parenthetical phrase in Finding of Fact 148 should be changed to read (combined cycle units are more fuel-efficient and permit the use of additional control equipment such as Selective Catalytic Reduction systems).

V. Comments at Hearing by Non-Parties

At hearing, CURE, the Minnesota Project and North American Water Office suggested that Mankato Energy use a biodiesel blend for back-up fuel. They accepted Mankato Energy's offer to work together and to make its laboratory available for further testing of a biodiesel option.

VI. Commission Action

The ALJ found that the application substantially conforms to the requirements of the applicable statutes and rules, as interpreted by the Commission, and recommended that the Commission grant the requested certificate of need.

The Commission has examined the full record in this case, and its reading of the evidence leads to the same findings and conclusions reached by the Administrative Law Judge. The Commission concurs in, adopts and incorporates the ALJ's Findings of Fact, Conclusions and Recommendation, as amended by the clarifications and corrections set forth by Mankato Energy and the DOC in their respective exceptions and by Commission staff. The clarifications and corrections set forth in the parties' exceptions herein, and not objected to by any party, are not of a substantial nature, are reasonable, and will be accepted.

The Commission will grant Mankato Energy the certificate of need as requested. The certificate of need is for the proposed facility and the transmission line(s) directly associated with the plant that are necessary to interconnect the plant to the transmission system. As part of this certification, the Commission finds that the Environmental Assessment prepared by the EQB staff and the record created adequately address the issues identified by the EQB Chair in the scoping decision.

The Commission recognizes the Company's immediate concern about the use of a biodiesel blend for those times that the facility does not have access to natural gas. However, the Commission supports the Company's stated intention to investigate the technical feasibility and economic viability of the use of a biodiesel blend and to move forward in the testing and evaluation of biodiesel fuels. The Commission will accept the Company's commitment to work with the Minnesota Project, the Soybean Growers Association, the University of Minnesota Center for Biodiesel Research and any other interested groups to do testing and evaluation of biodiesel fuels, including the use of the Company's experimental laboratories.

ORDER

1. The Commission grants Mankato Energy Center, LLC a certificate of need for the proposed facility and the transmission line(s) directly associated with the plant that are necessary to interconnect the plant to the transmission system.

2. Mankato Energy shall honor its commitment to make its testing facilities available for testing and evaluation of fuels and to work with those interested in order to continue to investigate the technical feasibility and economic viability of the use of a biodiesel blend for those times when the facility does not have access to natural gas as fuel.
3. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

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